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EXAMINER	
AHMED, FAROOQUE	
ART UNIT	**PAPER NUMBER**
2157	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/894,585	GHOSE ET AL.	
	Examiner	Art Unit	
	Farooque Ahmed	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/28/01*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-76* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-76* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/29/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The action is response to application filed on 06/28/01. Claims 1-76 are pending. Claims 1-76 represent SYSTEM AND METHOD FOR FAST, RELIABLE BYTE STREAM TRANSPORT.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 1-7,9-27,29-45,47-65 and 67-76 rejected under 35 U.S.C. 103(a) as being unpatentable over Forin et al. (US Patent No. 6,594,701) in view of Dunning et al. (US Patent No. 6,683,850).

4. As to claims 1 and 39, Forin teaches a method and system for quickly and reliably transmitting a byte stream from a sending node having a number of credits with an established connection to a receiving node in a communication environment having a plurality of nodes and a plurality of interconnectable paths, the method comprising:

transmitting a predetermined number of bytes of a byte stream from a sending node to a receiving node, said predetermined number of bytes corresponding to the number of credits present at said sending node (see col. 2, lines 50-67; col. 3, lines 125, Forin disclose packets are sent form sender to receiver, and buffer lists (credits) are sent differing in size);

transmitting a predetermined number of credits from said receiving node to said sending node when a predetermined event occurs; (see col. 3, lines 1-50, Forin discloses a number of buffer transmission executed between sender and receiver);

Forin fails to teach transmitting a predetermined number of negative acknowledgements from said receiving node to said sending node, when at least one transmitted byte is lost or corrupted. However Dunning teaches a number of negative acknowledgements from said receiving node to said sending node, when at least one transmitted byte is lost or corrupted. (See abstract) Dunning also discloses negative acknowledgements include at least one error indicate in data packet (see col. 3, lines 63-67; col. 4, lines 1-10)

It would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by transmitting a predetermined number of negative acknowledgements from receiving node to sending node. One would be motivated to do so as to alert the sender of a corrupt packet or packet error noticed by the receiver in the delivery system, and for the sender to retransmit those packets.

5. As to claims 2 and 40, Forin teaches the method and system as recited in claims 1 and 39. Forin fails to teach the step of retransmitting at least once, from said sending node to said receiving node, said lost or corrupted bytes corresponding to said predetermined number of negative acknowledgements received at said sending node. However Dunning teaches retransmitting at least once, from said sending node to said receiving node, said lost or corrupted bytes corresponding to said predetermined number of negative acknowledgements received at said sending node (see abstract). Dunning discloses retrying negative acknowledgements

including at least one error indicating a bad data packet, (see col. 3, lines 63-67; col. 4, lines 1-10; col. 8, lines 53- 67).

It would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by adding the function of retransmitting negative acknowledgements so as to alert the sender of a corrupt packet or packet error noticed by the receiver in the delivery system, and for the sender to retransmit those packets.

6. As to claims 3 and 41, Forin teaches the method and system as recited in claims 1 and 39, wherein said step of transmitting said predetermined number of credits from said receiving node to said sending node occurs before the transmission of said predetermined number of bytes of said byte stream (see col. 3, lines 1-25, Forin discloses more buffer (credit) size are sent from receiver to sender and determines the data packet to be sent to receiver).

7. As to claims 4 and 42, Forin teaches the method and system as recited in claims 3 and 41, wherein said step of transmitting of said predetermined number of credits occurs during a connection establishment of said sending node and said receiving node (see col.5, lines 5-16; col. 6, lines 15- 25; col.11, lines 5-10, Forin disclosed one or more buffer (credits) are sent between sender and receiver during the communication link).

8. As to claims 5 and 43, Forin teaches the method and system as recited in claims 3 and 41, wherein said step of transmitting of said predetermined number of credits occurs after a connection establishment of said sending node and said receiving node. (See col.5, lines 5-16; col. 12, lines 60-67, Forin disclosed one or more buffer (credits) are sent between sender and receiver during the communication).

9. As to claims 6 and 44, Forin teaches the method and system as recited in claims 1 and 39, wherein said predetermined event is one from the group of:

a) a predetermined number of bytes from said byte stream is received at said receiving node (see col.12, Lines 32 -45, Forin disclosed number of bytes are received by a receiver);

b) a predetermined number of bytes from said byte stream is received at said receiving node and a congestion indicator at said receiver node is less than a predetermined threshold, (see col.1,lines 50-65 ;col.12, Lines 32 -45, Forin disclosed congestion where packets are sent to a determined receiver buffer); c) a predetermined number of bytes from said byte stream is received at said receiving node and a data error indicator at said receiver node is less than a predetermined threshold (see col.2, lines 20-45 col. 16 lines 23-54 Forin disclosed data error accrue in connection when receiver buffer indicate buffer is full); d) a buffer at said receiving node, containing said bytes transmitted from said sending node to said receiving node, has free space(see col.1,lines 50-65 ;col.12, Lines 32 -45, Forin disclosed packets are sent to receiver where when buffer is empty so more data can be sent); e) a buffer at said receiving node, containing said bytes transmitted from said sending node to said receiving node, has free space and a congestion indicator at said receiver node is less than a predetermined threshold, (see col. 1, lines 13-65 Forin disclose packets are exchanged between sender and receiver where buffer size indicates more data can be sent); f) a buffer at said receiving node, containing said bytes transmitted from said sending node to said receiving node, has free space and a data error indicator at said receiver node is less then a predetermined threshold.(see col. 2 lines 20-45 Forin disclosed data is sent from sender to receiver where data error indicates receiver buffer smaller than it can receive).

10. As to claims 7 and 45, Forin teaches the method and system as recited in claims 1 and 39, wherein the reception of said credits at said receiving node indicates that at least a subset of said byte stream was correctly received at said receiving node. (See col.12, lines 32-45,Forin disclosed credits are determined with the first data packet bytes and are sent to receiver).

11. As to claims 9 and 47, Forin teaches the method and system as recited in claims 1 and 39, wherein said credits from said credit transmission step are reduced or delayed to reflect congestion detection in an established connection (See col. 18, lines 50-60 Forin disclosed receiver communicates a new credit to sender at any given time, pervious credit list is used before communication to new credit, where it can reduce the number of credit to receiver from sender).

12. As to claims 10 and 48, Forin teaches the method and system as recited in claims 1 and 39, wherein said step of transmitting of said predetermined number of bytes is dependent upon a counter exceeding a predetermined number representative of received credits at said sending node, said transmitting step including the steps of:

transmitting said bytes from said sending node to said receiving node when said counter is equal to at least said number of bytes (see col. 15,lines 1-35 Forin disclosed decrementing the counter when data is being exchanged between devices). decrementing said counter by said number of bytes upon said transmission of said bytes (see col. 15 lines 1-35,Forin disclosed decrementing the counter queue when data is being request from receiver).

13. As to claims 11 and 49, Forin teaches the method and system as recited in claims 1 and 39, wherein said bytes transmitted in said byte transmission step are in the form of Transmission Control Protocol (TCP) packets, whereby said method is compatible at the application

programming level of TCP (see col. 3, lines 10-25; col. 4, lines 1-9, Forin disclosed communication containing application level receive buffer size to the sender and TCP sender may send data to receiver).

14. As to claims 12 and 50, Forin teaches the method and system as recited in claims 1 and 39, wherein the established connection between said sending node and said receiving node is established using the standard 3-way handshake of Transmission Control Protocol (TCP). (See col.3, lines 63-67; col. 4, lines 19, Forin disclosed sender and receiver exchange credit message through TCP communication).

15. As to claims 13 and 51, Forin teaches the method and system as recited in claims 1 and 39. Forin fails to teach a further including the step of resetting said established connection when said transmission of at least one of said negative acknowledgements occurs a predetermined number of times. However Dunning teaches a of resetting said established connection when said transmission of at least one of said negative acknowledgements occurs a predetermined number of times (see abstract) Dunning disclosed retry the pervious link established and transmits negative acknowledgements (see col. 8, lines 53-67; col. 9 lines 53- 58).

It would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by providing established connection transmission of at least one negative acknowledgements occurs a predetermined number of times. One would be motivated to do so to alert the sender of corrupt packet or packet error by the receiver in the delivery system to retransmit the packets in connection transmission.

16. As to claims 14 and 52, Forin teaches the method and system as recited in claims 1 and 39, wherein said transmitting of said predetermined number of credits occurs by piggybacking

existing traffic with said credits from said receiving node to said sending node (see col.12, lines 32 -67; col.13, lines 1-13; col.15, lines 35-52, Forin disclosed predetermined number of credits are sent from sender and predetermined number of credits to receiver).

retransmitted if they are lost (see fig 4, col.1 lines 24-25; col.2, lines 66-67; col.18, Lines 61-67 Forin disclosed data may be lost and when new credits are communicated to sender, it is adaptable to not be repeated).

17. As to claims 15 and 53, Forin teaches the method and system as recited in claims 1 and 39, wherein said credits in said credit transmission step are not retransmitted if they are lost retransmitted if they are lost (see Fig 4 co14. lines 24-25; col 2 lines 66-67; col 18 lines 61-67 Forin disclose data may be lost and when it is adaptable to not be repeated).

18. As to claims 16 and 54, Forin teaches the method and system as recited in claims 1 and 39. Forin fails to teach predetermined number of negative acknowledgements is transmitted at predetermined events. However Dunning teaches number of negative acknowledgements is transmitted at predetermined events. (See abstract) Dunning disclose retry negative acknowledgements include at least one error indicated in bad data packet, see col. 3, lines 63-67; col. 4, lines 1-10; col. 8, lines 53- 67).

It would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by providing number of negative acknowledgements is transmitted at predetermined events. One would motivated to do so because retransmitting negative acknowledgements would alert the sender of corrupt packet or lost packet thereby prompting the sender to effect packet retransmission.

19. As to claims 17 and 55, Forin teaches the method and system as recited in claims 1 and 39, Forin fail to teach wherein said at least one: corrupted byte is detected by means of error detection hardware only. However Dunning teaches at least one corrupted byte is detected by means of error detection hardware only. (See abstract) Dunning disclosed I/O devices where corrupted packet and bit errors are found. See col.6, lines 23-30).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning so that packets transmission stay reliable and packets are not dropped or reorder due to network congestion or bit error.

As to claims 18 and 56, Forin teaches the method and system as recited in claims 1 and 39. Forin fails to teach, least one corrupted byte is detected only once by software error detection means. However Dunning teaches a one corrupted byte is detected only once by software error detection means. (See abstract) Dunning disclose CRC error detection technique to determined any message which has been corrupted, see col.8, lines 27-50).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by adding the CRC software error detection mechanism to determine whether any errors exit in packet bits before packet are transmit.

20. As to claims 19 and 57, Forin teaches a method and system for quickly and reliably transmitting a byte stream from a sending node having credits with an established connection to a receiving node in a communication environment having a plurality of nodes and with a plurality of interconnectable paths, where the bytes of said byte stream are formed into a plurality of data packets of a protocol, the method comprising:

providing a predetermined identifier associated with data packets;(see cot. 4 lines 3) if said predetermined identifier indicates a credit and negative acknowledgement transport system, transmitting a predetermined number of bytes of a byte stream from a sending node to a receiving node, corresponding to the number of credits present at said sending node; (see cot. 2, lines 50-67; cot. 3; lines 1-25, Forin disclose packets are sent form sender and receiver and list of buffer are sent different in size);

transmitting a predetermined number of credits from said receiving node to said sending node when a predetermined even occurs; (see cot. 3, lines 1-50, Forin disclose number of buffer transmission between sender arid receiver)

Forin fails to teach transmitting a predetermined number of negative acknowledgements from said receiving node to said sending node, when at least one transmitted byte is lost or corrupted. However Dunning teaches a number of negative acknowledgements from said receiving node to said sending node, when at least one transmitted byte is lost or corrupted. (See abstract:) Dunning disclose negative acknowledgements include at least one error indicate in data packet, see cot. 3, lines 63-67; cot. 4, lines 1-10)

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning to alert the sender of corrupt packet or packet error by the receiver in delivery system to retransmit to corrupt packets.

21. As to claims 20 and 58, Forin teaches the method and system as recited in claims 19 and 57. Forin fails to teach if said predetermined identifier indicates a transport system that is not exclusively credit and negative acknowledgement based, processing said data stream by a transport system independent of credit and negative acknowledgements, whereby compatibility

at the application programming level of a protocol is maintained. However Dunning teaches predetermined identifier indicates a transport system that is not exclusively credit and negative acknowledgement based, processing said data stream by a transport system independent of credit and negative acknowledgements, whereby compatibility at the application programming level of a protocol is maintained. (See abstract) Dunning disclose negative acknowledgements include at least one error indicate in data packet, see col. 3, lines 63-67; col. 4, lines 110)

It would have been obvious to a person haring ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by providing transport system that is not exclusively credit and negative acknowledgement based processing, one would be motivated to do so where in application to application protocol based connection negative acknowledgements are transmitted to alert the sender of corrupt packet or packet error by the receiver in delivery system to retransmit to corrupt packets.

22. As to claims 21 and 59, Forin teaches the method and system as recited in claims 19 and 57, the steps further comprising:

providing a first packet filter for filtering data packets at a sending node (see col. 19 lines 1-43, Forin disclose filter the first data message at sender nodes);

providing a second packet filter for filtering data packets at a receiving node, s that said predetermined identifier indicates a credit and negative acknowledgement transport system dependent on said first and second packet filters (see col.19 lines 143, Forin disclose filter the first data message at sender nodes);

Forin fails to teach transmitting a predetermined number of negative acknowledgements from said receiving node to said sending node, when at least one transmitted byte is lost or

corrupted. However Dunning teaches a number of negative acknowledgements from said receiving node to said sending node, when at least one transmitted byte is lost or corrupted. (See abstract) Dunning disclose negative acknowledgements include at least one error indicate in data packet, see col. 3, lines 63-67; col. 4, lines 1-10)

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by adding the function of negative acknowledgements to alert the sender of corrupt packet or packet error by the receiver in delivery system to retransmit to corrupt packets.

23. As to claims 22 and 60, Forin teaches the method and system as recited in claims 19 and 57. Forin fails to teach the step of retransmitting at least once, from said sending node to said receiving node, said lost or corrupted bytes corresponding to said predetermined number of negative acknowledgements received at said sending node. However Dunning teaches retransmitting at least once, from said sending node to said receiving node, said lost or corrupted bytes corresponding to said predetermined number of negative acknowledgements received at said sending node (see abstract). Dunning disclose retry negative acknowledgements include at least one error indicate in bad data packet, (see col. 3, lines 63-67; col. 4, lines 1-10; col. 8, lines 53- 67).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by adding the function of retransmitting negative acknowledgements to a receiver in case of error or corrupted transmission to alert the communication system during the three-way handshake system.

As to claims 23 and 61, Forin teaches the method and system as recited in claims 19 and 57, wherein said step of transmitting said predetermined number of credits from said receiving node to said sending node occurs before the transmission of said predetermined number of bytes of said byte :stream (see col. 3, lines 1-25, Forin disclose more buffer (credit) size are sent form receiver to sender and determined the data packet to be sent to receiver).

24. As to claims 24 and 62, Forin teaches the method and system as recited in claims 23 and 61, wherein said step of transmitting of said predetermined number of credits occurs during a connection establishment of said sending node and said receiving node (see col.5, lines 5-16; col. 6, lines ', 5- 25; col.11, lines 5-10, Forin disclosed one or more buffer (credits) are sent between sender and receiver during the communication link).

25. As to claims 25 and 63, Forin teaches the method and system as recited in claims 23 and 61, wherein said step of transmitting of said predetermined number of credits occurs after a connection establishment of said sending node and said receiving node. (See col.5, lines 5-16; col. 12, lines 60-67, Forin disclosed one or more buffer (credits) are sent between sender and receiver during the communication may).

26. As to claims 26 and 64, Forin teaches the method and system as recited in claims 19 and 57, wherein said predetermined event is one from the group of: a) a predetermined number of bytes from :said byte stream is received at said receiving node (see col.12, Lines 32 -45, Forin disclosed number of bytes are received by a receiver); b) a predetermined number of bytes from said byte stream is received at said receiving node and a congestion indicator at said receiver node is less than a predetermined threshold, (see col.1,lines 50-65 ;col.12, Lines 32 -45, Forin disclosed congestion where packets are sent to a determined receiver buffer);

c) a predetermined number of bytes from said byte stream is received at said receiving node and a data error indicator at said receiver node is less than a predetermined threshold (see col.2, lines 20-45 col. 16 lines 23-54 Forin disclosed data error accrue in connection when receiver buffer indicate buffer is full); d) a buffer at said receiving node, containing said bytes transmitted from said sending node to said receiving node, has free space (see col.1,lines 50-65, col.12, Lines 32 -45, Forin disclosed packets are sent to receiver where is buffer is empty more date can be sent); e) a buffer at said receiving node, containing said bytes transmitted from said sending node to said receiving node, has free space and a congestion indicator at said receiver node is less than a predetermined threshold, (see col. 1, lines 13-65 Forin disclose packets are exchanged between sender and receiver where buffer size indicates more data can be sent); f) a buffer at said receiving node, containing said bytes transmitted from said sending node to said receiving node, has free space and a data error indicator at said receiver node is less then a predetermined threshold.(see col. 2 lines 20-45 Forin disclosed data is sent from sender to receiver where data error indicate receiver buffer smaller than it can receive).

27. As to claims 27 and 65, Forin teaches the method and system as recited in claims 19 and 57, wherein the reception of said credits at said receiving node indicates that at least a subset of said byte stream was correctly received at said receiving node (See col.12, lines 32-45,Forin disclosed credits are: determined with the first data packet bytes and are sent to receiver).

28. As to claims 29 and 67, Forin teaches the method and system as recited in claims 19 and 57, wherein said credits from said credit transmission step are reduced or delayed to reflect congestion detection in an established connection (See col. 18, lines 50-60 Forin disclosed receiver communicates a new credit to sender at any given time, pervious credit list is used

before communication to new credit, where it can reduce the number of credit to receiver from sender).

29. As to claims 30 and 68, Forin teaches the method and system as recited in claims 19 and 57, wherein said step of transmitting of said predetermined number of bytes is dependent upon a counter exceeding a predetermined number representative of received credits at said sending node, said transmitting step including the steps of:

transmitting said bytes from said sending node to said receiving node when said counter is equal to at least said number of bytes (see col. 15,lines 1-35 Forin disclosed decrementing the counter when data is being exchanged between devices);

decrementing said counter by said number of bytes upon said transmission of said bytes (see col. 15 lines 1-35,Forin disclosed decrementing the counter queue when data is being request from receiver).

30. As to claims 31 and 69, Forin teaches the method and system as recited in claims 19 and 57, wherein said bytes transmitted in said byte transmission step are in the form of Transmission Control Protocol (TCP) packets, whereby said method is compatible at the application programming level of TCP (see col. 3, lines 10-25; col. 4, lines 1-9, Forin disclosed communication containing application level receive buffer size to the sender and TCP sender may send data to receiver).

31. As to claims 32 and 70, Forin teaches the method and system as recited in claims 19 and 57, wherein the established connection between said sending node and said receiving node is established using the standard 3-way handshake of Transmission Control Protocol (TCP). (See

col.3, lines 63-67; col. 4, lines 19, Forin disclosed sender and receiver exchange credit message through TCP communication).

32. As to claims 33 and 71, Forin teaches the method and system as recited in claims 19 and 57. Forin fails to teach a further including the step of resetting said established connection when said transmission of at least one of said negative acknowledgements occurs a predetermined number of times. However Dunning teaches a of resetting said established connection when said transmission of at least one of said negative acknowledgements occurs a predetermined number of times.(see abstract) Dunning disclosed retry the pervious link established and transmits negative acknowledgements (see col. 8, lines 53-67; col. 9 lines 53- 58).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Chariton by adding the function where retry previous line and one negative acknowledgements are transmit in predetermined number credit sent from sender to receiver.

33. As to claims 34 and 72, Forin teaches the method and system as recited in claims 19 and 57, wherein said transmitting of said predetermined number of credits occurs by piggybacking existing traffic with said credits from said receiving node to said sending node (see col.12, lines 32 -67; col.13, lines 1-13; col.15, lines 35-52, Forin disclosed predetermined number of credits are sent from sender and predetermined number of credits to receiver).

34. As to claims 35 and 73, Forin teaches the method and system as recited in claims 19 and 57, wherein said credits in said credit transmission step are not retransmitted if they are lost (see fig 4, col.1 lines 24-25; col.2, lines 66-67; col.18, Lines 61-67 Forin disclosed data may be lost and when new credits are communicated to sender, it is adaptable to not be repeated).

35. As to claims 36 and 74, Forin teaches the method and system as recited in claims 19 and 57. Forin fails to teach predetermined number of negative acknowledgements is transmitted at predetermined events. However Dunning teaches number of negative acknowledgements is transmitted at predetermine=d events. (See abstract) Dunning disclose retry negative acknowledgements include at least one error indicated in bad data packet, see col. 3, lines 63-67; col. 4, lines 1-10; col. 8, lines 53- 67).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by adding the function of retransmitting negative acknowledgements which are received by receiver in case of error make sure receiving entities receive ,all transmit packet.

36. As to claims 37 and 75, Forin teaches the method and system as recited in claims 19 and 57. Forin fail to teach wherein said at least one corrupted byte is detected by means of error detection hardware only. However Dunning teaches a one corrupted byte is detected by means of error detection hardware only. (See abstract) Dunning disclosed 110 devices where corrupted packet and bit errors is found. See col.6, lines 23-30).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning so that packets transmission stay reliable and packets are not dropped or reorder due to network congestion or bit error.

As to claims 38 and 76, Forin teaches the method and system as recited in claims 19 and 57. Forin fails to teach, least one corrupted byte is detected only once by software error detection means. However Dunning teaches a one corrupted byte is detected only once by software error

detection means. (See abstract) Dunning disclose CRC error detection technique to determined any message been corrupted, see col.8, lines 27-50).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Dunning by adding the CRC software error detection mechanism detect: the corrupted retransmitted message between receiver and sender.

37. Claims 8,28,46,and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forin et al. (US Patent No. 6,594,701) in view of Dunning et al. (US Patent No. 6,683,850) further view of Cheriton et al. (US Patent No 6,724,721).

38. As to claims 8 and 46, Forin teaches the method and system as recited in claims 1 and 39, wherein said step of transmitting of said predetermined number of credits is dependent upon a counter exceeding a predetermined number representative of received bytes at said receiving node, said transmitting step including the steps of:

transmitting a predetermined number of credits from said receiving node to said sending node(see col.8, lines 18-23; col. 15, lines 46-53, Forin disclosed predetermined number of credits are sent form sender to receiver).

Forin fails to teaches wherein said counter is equal to at least a predetermined value decrementing said counter by said byte size upon transmission of said credits. However Cheriton teaches when said counter is equal to at least a predetermined value and decrementing said counter by said byte size upon transmission of said credits (See abstract) Cheriton disclose

credits values is tested against the zero and credit values is decremented by credit size (see col 4, lines 34-44).

It would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Chariton by providing counter is equal to at least a predetermined value. One would be motivated to do so, so that traffic flow can be efficiently managed and improved using credits values, which represent flow parameters.

39. As to claims 28 and 66, Forin teaches the method and system as recited in claims 19 and 57, wherein said step of transmitting of said predetermined number of credits is dependent upon a counter exceeding a predetermined number representative of received bytes at said receiving node, said trarsmitting step including the steps of:

transmitting a predetermined number of credits from said receiving node to said sending node(see col.8, lines 18-23; col. 15, lines 46-53, Forin disclosed predetermined number of credits are sent form sender to receiver).

Forin fails to teaches when said counter is equal to at least a predetermined value; and decrementing said counter by said byte size upon transmission of said credits. However Chariton teaches when said counter is equal to at least a predetermined value; and decrementing said counter by said byte size upon transmission of said credits (See abstract) Chariton disclose credits values is tested against the zero and credit values is decremented by credit size (see col 4, lines 34-44).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify Forin in view of Chariton to alert the sender

of a corrupt packet or packet error noticed by the receiver in the delivery system, and for the sender to retransmit those packets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farooque Ahmed whose telephone number is 703-605-4212. The examiner can normally be reached on M-F 8:30 to 5:00 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Farooque Ahmed/Examiner Art Unit 2157

SALEH NAJJAR
PRIMARY EXAMINER